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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,576	02/25/2002	Hirofumi Shibuya	XA-9628	8735

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MILES & STOCKBRIDGE PC  
1751 PINNACLE DRIVE  
SUITE 500  
MCLEAN, VA 22102-3833

EXAMINER
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HO, THANG H

ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/080,576

Applicant(s)

SHIBUYA ET AL.

Examiner

Thang H Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-9 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-9 and 12-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office Action is in response to applicant's amendment dated March 31, 2004. The applicant's remarks and amendment were considered with the results that follow.
2. Claims 1-21 are pending in this application for examination. Claims 2-5, 7-9, and 12-15 have been amended, claims 1, 10-11 and 16-21 have been cancelled and no new claim has been added. Therefore, claims 2-9 and 12-15 remain pending in the application.
3. The objection to the disclosure is withdrawn due to the Amendment filed on March 31, 2004.

### ***Information Disclosure Statement***

4. The information disclosure statement (IDS) filed on April 6, 2004 has been received and considered. Please see attached PTO-1449.
5. Applicant is reminded of the duty to fully disclose information under 37 CFR 1.56.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 2-3 and 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Hirabayashi et al. (United States Patent 6,219,768), hereinafter Hirabayashi.

**As per claims 2 and 12**, Hirabayashi discloses in figure 2 a memory unit (20) including a memory device (21) having a data unit and a management unit corresponding to the data unit [column 2, lines 19-22 “...*storage means for storing data and the area management information...*”], wherein the data unit is divided into a plural memory areas [(FIG. 3A, reference “BLOCK”)], wherein the management unit is capable of controlling separately each of the memory areas for accessing using management information corresponding to each of the memory areas [(see figures 3A-3C and column 7, lines 10-49 “...*Each block... is made up of plural pages... data are read out by the controller 25... Each page... has a data storage area and a management information storage area...*”)], wherein the management information includes a first control information, a second control information and a third control information, wherein the first control information indicates whether or not writing data in corresponding memory area of the plural memory areas is prohibited [(column 9, lines 25-28 “*The management flag specifies bock attributes... specifies... the block being a read-only...*”)], and wherein the second control

information indicates whether or not reading out data from corresponding memory area of the plural memory areas is prohibited [(column 9, lines 25-28 "*The management flag specifies block attributes... specifies... the block... being also writeable.*"), and wherein the third control information indicates that whether or not there is capability of performing mirroring for storing data which are written in a prescribed memory area of the plural memory areas and for storing the data to another memory area at a same time [(FIG. 3C, reference SPARE DISTRIBUTED MANAGEMENT INFORMATION and column 7, lines 62-67 "*There is also stored, as the spare distributed management information, the same management information as the distributed management information...*")].

**As per claim 3,** Hirabayashi discloses the memory unit (20) wherein the management information includes control information indicates whether or not a memory area which is kept as a spare area in advance is capable of being used [(FIG. 3C, reference "SPARE DISTRIBUTED MANAGEMENT INFORMATION" and column 7, lines 62-67 "*There is also stored, as the spare distributed management information, the same management information as the distributed management information...*")].

**As per claim 13,** Hirabayashi further discloses that the method for controlling a memory device according to claim 12, wherein said management information includes a control information for identifying whether or not a memory area is usable [(FIG. 3C, reference "POSSIBLE/NOT POSSIBLE FLAG" and column 8, lines 49-50 "*The*

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*possible/not possible flag denotes whether a block is in the usable state or in the non-usable state.”)].*

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-7, 9 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirabayashi et al. (United States Patent 6,219,768), hereinafter Hirabayashi, in view of Ma et al. (United States Patent 5,956,473), hereinafter MA.

**As per claims 4 and 14**, Hirabayashi discloses the memory unit substantially as claimed.

However, Hirabayashi fail to disclose the management information comprising control information for indicating erasing number of times or rewriting number of times of a memory area.

Ma teaches the usage of a wear leveling method comprising control information for indicating erasing number of times or rewriting number of times of a memory area [(Abstract “*The present application also discloses a war leveling method in which the difference between the number of erasures of any two blocks ...*”, column 8, lines 33-65 “... the attribute “age count” is increased by 1 every time a block is erased...”)].

Accordingly, it would have been prima facie obvious for one skilled in the art at the time the invention was made to implement the system and method as taught by Hirabayashi and utilize a wear leveling method as taught by Ma to generate the claimed invention with a reasonable expectation of success.

One skilled in the art would have been motivated to do so, because it would equalize the amount of erasure for all the blocks within the memory unit reducing the chance that any one block of the memory unit from premature failing, thereby extending the life of the memory unit as pointed out by Ma starting on column 10, lines 60 through column 11, lines 11. .

**As per claim 5**, Hirabayashi discloses in FIG. 2 that the memory unit further including a memory device (21) for storing the management information altogether (i.e. within the memory blocks) [(see FIGS. 3A-3C)].

**As per claim 6**, Hirabayashi discloses that an area for storing the management information by each memory area is provided in the plural memory areas [(see FIGS. 3A-3C)].

**As per claim 7**, Hirabayashi discloses that the memory unit further including a control device for controlling separately each memory area based on the management information [(FIG. 2, references 25-26)].

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**As per claim 9**, Hirabayashi discloses that the control device includes a controlling unit for processing [(FIG. 2, reference 26)] the management information by exclusive hardware [(column 6, lines 5 –56)].

**As per claim 15**, Hirabayashi discloses that the management information is capable of being edited in an edit mode, and wherein the memory device is capable of transferring to the edit mode by an inputted command [(FIG. 2, column 6, lines 31-41 “...  
*The controller 26 causes the area management flag... to be written in the flash memory 21.*”)].

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirabayashi et al. (United States Patent 6,219,768), hereinafter Hirabayashi, in view of Ma et al. (United States Patent 5,956,473), hereinafter MA, as applied to claims 4-7, 9 and 14-15 above, and further in view of Ritchie (United States Patent 4,135,240).

**As per claim 8**, the combination of Hirabayashi and Ma memory unit discloses the invention substantially as claimed including the control means comprising a controlling unit for processing [(FIG. 2, reference 26)] the management information by exclusive hardware [(column 6, lines 5 –56)].

However neither Hirabayashi nor Ma discloses expressly the control device includes a micro processing unit (inherent) for processing the management information by software.



Ritchie teaches an improved arrangement for controlling access to data files in the memory, the access control can be expressed either in terms of a computer program (software) or a computer circuitry (hardware), wherein the two being functional equivalents of one another, so that to have a flexible way of access control, since for some purposes a software may be preferable and for others hardware may be preferable [(Ritchie, column 5, lines 42-60)].

Accordingly, it would have been obvious to one having ordinary skill in the art at the time of the current invention was made to employ Ritchie's teaching into the combination of Hirabayashi and Ma memory unit in order to have design flexibility for access control since for some purposes a software may be preferable and for others hardware may be preferable.

### ***Response to Arguments***

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a third control and a fourth control as recited in independent claims 2 and 12) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The limitation "wherein said management information includes an arbitrary one of first control information, second control information, third control information and fourth control information..." in claims 2 and 12 requires only one of the control information. Hirabayashi clearly discloses at least the first and the second control information as

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detailed in the rejections of claims 2 and 12 above. Therefore, the rejection of claims 2-9 and 12-15 is deemed to be proper. Hirabayashi's and Ma's teachings, taken alone or in concert, disclose each and every element recited within claims 2-9 and 12-15.

***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thang H Ho whose telephone number is 703-305-1888. The examiner can normally be reached on Monday-Friday from 7:00 A.M. - 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 703-306-2903. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thang Ho  
Art Unit 2188  
June 4, 2004

*Mano Padmanabhan*  
6/8/04

**MANO PADMANABHAN  
SUPERVISORY PATENT EXAMINER**